

p.28-29 Solving by Substitution 3.2

Which variable is the easiest to ISOLATE?

p.28

$$\textcircled{1} \quad x = 2y - 6$$

$$3x - 4y = 8$$

$$3(\quad) - 4y = 8$$

$$6y - 18 - 4y = 8$$

$$\begin{array}{r} 2y - 18 = \\ \hline 2y = 26 \\ \hline y = 13 \end{array}$$

$$\text{Solution: } (20, 13)$$

Check:

$$3(20) - 4(13) \stackrel{?}{=} 8$$

$$60 - 52 = 8$$

$$8 = 8 \checkmark$$

$$x = 2(13) - 6$$

$$x = 26 - 6$$

$$x = 20$$

Your cell phone provider uses two different plans:

p.29

☒ a.) One plan costs \$.20 per text plus \$45 monthly service charge.

☒ b.) The other plan costs \$.50 per text with no service charge.

Write a system of equations to represent the cost of the cell phone plans.

$$y = .20x + 45$$

$$y = .50x$$

For how many texts will both plans cost the same?

$$\begin{array}{r} .20x + 45 = .50x \\ - .20x \quad \quad - .20x \\ \hline 45 = .30x \\ \hline \frac{45}{.30} = \frac{.30x}{.30} \\ x = 150 \end{array}$$

If you send and receive about 500 text per month, which plan should you use?

$$y = .20(500) + 45$$

$$y = 145$$

$$y = .50(500)$$

$$y = 250$$

Assignment p. 146 #10 -18 evens.

Solve each system by substitution. Check your answers.

 See Problem 1.

$$10. \begin{cases} 4x + 2y = 7 \\ y = 5x \end{cases}$$

$$11. \begin{cases} 3c + 2d = 2 \\ d = 4 \end{cases}$$

$$12. \begin{cases} x + 12y = 68 \\ x = 8y - 12 \end{cases}$$

$$13. \begin{cases} 4p + 2q = 8 \\ q = 2p + 1 \end{cases}$$

$$14. \begin{cases} x + 3y = 7 \\ 2x - 4y = 24 \end{cases}$$

$$15. \begin{cases} x + 6y = 2 \\ 5x + 4y = 36 \end{cases}$$

$$16. \begin{cases} t = 2r + 3 \\ 5r - 4t = 6 \end{cases}$$

$$17. \begin{cases} y = 2x - 1 \\ 3x - y = -1 \end{cases}$$

$$18. \begin{cases} r + s = -12 \\ 4r - 6s = 12 \end{cases}$$